IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

ART+COM INNOVATIONPOOL GMBH,

Plaintiff,

v.

GOOGLE INC.,

Defendant.

Civil Action No. 1:14-217-TBD

MEMORANDUM ORDER

Presently before the court are Plaintiff ART+COM Innovationpool GmbH's ("ACI") Rule 50(b) Motions for Post-Trial Relief ("ACI's Motions") (D.I. 437 & 440), ACI's opening brief (D.I. 445), Defendant Google Inc.'s ("Google") opposition (D.I. 458), and ACI's reply (D.I. D.I. 466).

For the reasons set forth below, **IT IS HEREBY ORDERED THAT**: ACI's Motions are **DENIED.**

BACKGROUND

ACI brought this patent infringement action against Google on February 20, 2014, alleging infringement of U.S. Patent No. RE44,550 ("the '550 patent"). D.I. 1. ACI claimed that Google products "Google Earth, Version 7 and prior versions dating back to 2008, including Google Earth Free, Google Earth Enterprise, Google Earth Pro, and Google Earth for Audi . . .; Google Earth Version 8; and Google Earth for Google Maps" ("Google Earth" or the "Google Earth Products") infringe of claims 1, 3, 14, and 28 of the '550 patent ("the asserted claims"). D.I. 375 at 3. Google argued that it does not infringe any of the asserted claims, that the asserted claims

are invalid as anticipated and/or obvious, and that the asserted claims are unenforceable. *Id.* The case was tried to a jury from May 23 to May 27, 2016.[1]

At the conclusion of the five-day trial, the jury returned a verdict. The jury found that Google did not infringe any of the asserted claims of the '550 patent. D.I. 412 at 1. The jury further found that claims 1, 3, 14, and 28 are anticipated by the SRI TerraVision System prior art. *Id.* at 2. It alternatively found that claims 1, 14, and 28 are anticipated by the T_Vision Paper prior art and that claim 3 would have been obvious in light of the T_Vision Paper and U.S. Patent No. 4,972,319 (the "Global Mapping Patent" or "the '319 patent"). *Id.* at 4, 5. The parties agreed that Google's affirmative defenses of inequitable conduct and laches were moot in light of the jury's verdict. *See* Trial Tr. 1564:19–24.

The court entered final judgment on May 31, 2016, and an amended judgment on July 12, 2016. D.I. 416; 449. Pursuant to Rule 50(b), ACI renews its Rule 50(a) motion for judgment as a matter of law ("JMOL"). ACI also moves, in the alternative, for a new trial under Rule 59.

Discussion

I. ACI's JMOL Motions

Rule 50(a) permits a court to grant a motion for judgment as a matter of law "[i]f a party has been fully heard on an issue during a jury trial and the court finds that a reasonable jury would not have a legally sufficient evidentiary basis to find for the party on that issue." Fed. R. Civ. P. 50(a)(1). "Entry of judgment as a matter of law is a sparingly invoked remedy," one "granted only if, viewing the evidence in the light most favorable to the nonmovant and giving it the advantage of every fair and reasonable inference, there is insufficient evidence from which a

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[1] The trial transcript is located at D.I. 418, 419, 420, 421, 422, and 423. All citations to the trial transcript are in the format "Trial Tr. at" followed by the transcript page number : line number.

jury reasonably could find liability." *Marra v. Phila. Hous. Auth.*, 497 F.3d 286, 300 (3d Cir. 2007) (internal quotation marks omitted). To prevail on a motion for judgment as a matter of law after trial, the moving party "must show that the jury's findings, presumed or express, are not supported by substantial evidence or, if they were, that the legal conclusion(s) implied [by] the jury's verdict cannot in law be supported by those findings." *Pannu v. Iolab Corp.*, 155 F.3d 1344, 1348 (Fed. Cir. 1998) (alteration in original) (internal quotation marks and citation omitted).

The '550 patent is entitled "Method and Device for Pictorial Representation of Space-Related Data." '550 patent at col. 1, ll. 1–3. The parties agreed to a December 22, 1995, priority date. The patent claims a method for "pictorial representation of space-related data, particularly geographical data of flat or physical objects," e.g., electronic maps of geography and topology. *Id.* at col. 1, ll. 15–22.

Claim 1 is the only independent claim asserted by ACI. Claim 1 recites:

> 1. A method of providing a pictorial representation of space-related data of a selectable object, the representation corresponding to a view of the object by an observer with a selectable location and a selectable direction of view comprising:
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> (a) providing a plurality of spatially distributed data sources for storing space-related data;
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> (b) determining a field of view including an area of the object to be represented through a selection of a distance of the observer to the object and an angle of view of the observer to the object;
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> (c) requesting data for the field of view from at least one of the plurality of spatially distributed data sources;
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> (d) centrally storing the data for the field of view;
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> (e) representing the data for the field of view in a pictorial representation having one or more sections;
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> (f) using a computer, dividing each of the one or more sections having image resolutions below a desired image resolution into a plurality of smaller

> sections, requesting higher resolution space-related data for each of the smaller sections from at least one of the plurality of spatially distributed data sources, centrally storing the higher resolution space-related data, and representing the data for the field of view in the pictorial representation; and
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> (g) repeating step (f), dividing the sections into smaller sections, until every section has the desired image resolution or no higher image resolution data is available.

Id. at col. 10, ll. 15–42.

Claim 2, from which claim 3 depends, requires "[t]he method of pictorial representation defined in claim 1, further including altering the selectable location and performing the steps (b) through (g)." *Id.* at col. 10, ll. 43–45. ACI asserts claim 3, which further requires "including determining the data and/or the co-ordinates of the data in terms of a new co-ordinate system." *Id.* at col. 10, ll. 47–48. Asserted claim 14 depends from claim 1, and specifies "wherein the step (f) comprises dividing each of the one or more sections using a model of the quadrant tree." *Id.* at col. 11, ll. 20–21. Asserted claim 28 also depends from claim 1, and requires "steps (e) and (f) further include representing the data with a polygonal grid model." *Id.* at col. 12, ll. 2–3.

A. ACI's Motion for JMOL of Infringement

ACI moves for a judgment as a matter of law that the accused Google Earth Products infringe claims 1, 3, 14, and 28 of the '550 patent. ACI claims that there is no substantial evidence to support a verdict of noninfringement. The burden of proving infringement was on ACI. *See Medtronic, Inc. v. Mirowski Family Ventures, LLC*, 134 S. Ct. 843, 846 (2014).

At trial, Google did not dispute that the Google Earth Products meet steps (a)–(e) of claim 1, nor did Google dispute, if steps (f) and (g) are met, that the additional limitations of dependent claims 3, 14, and 28 are met. *See* D.I. 410 at 15. The jury was so instructed. The parties only disputed whether the accused products practice steps (f) and (g) of claim 1. *Id.* As to

steps (f) and (g), the jury instructions repeated the language of the patent and further instructed that "[w]hile dividing any given section into smaller sections must occur prior to requesting higher resolution space-related data for each of those smaller sections, it is not necessary that all sections must be divided before higher resolution space-related data can be requested for any of the smaller sections," and that "step (f) must be performed before step (g)." D.I. 410 at 11–12; *see also* D.I. 382 at 2–3. There is no objection to that claim construction in the post-trial memoranda. ACI argues that there is no substantial evidence of non-infringement of either steps (f) or (g). D.I. 445 at 4.

At trial, Google urged that it did not infringe step (f) because the method of the Google Earth Products skipped nodes, that it, it requested and represented finer resolution nodes without requesting or representing coarser nodes. Google's corporate representative, Peter Birch, testified on how Google Earth uses metadata trees (such as a quad tree) to request space-related data from data centers. According to Mr. Birch, Google Earth

> traverse[s] or we basically kind of walk our way down the tree to . . . visit each of these nodes [of the metadata tree] to find out is this relevant, . . . driven by whether [the space-related data at the node is] in the view or not. . . . So in the process of this traversal we're making a list, almost like a shopping list. . . . So this list is in a particular order. And it's what we call traversal order. . . . Some of these nodes are more important than other nodes, so what we're going to do is we're going to shuffle them around and re-prioritize them. . . . There's an appropriate resolution for the given view, and so what we're going to want to do is . . . get those nodes first.

Trial Tr. at 911:5–915:1.[2] In other words, Google Earth creates a list of nodes, which store space-related data of relevant geographic areas at certain resolutions, and orders the list with priority

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[2] ACI argues that "the nodes [Mr. Birch and Dr. Goodchild] claim are 'skipped' are ones that are not displayed, per step (e)." D.I. 445 at 8. That is inconsistent with the testimony. For example, Mr. Birch testified that Google Earth traverses and prioritizes nodes "for the given

given to nodes with higher image resolution. Then, Mr. Birch explained, "now . . . we have to start fetching some of this data or requesting this data" using computer tasks. *Id.* at 915:14–16. However, Mr. Birch testified that Google Earth does not "request[] all of the nodes on this list, we[] only request[] a portion of them. . . . [I]n fact, in this case, we haven't fetched all of the nodes. We've only actually fetched a portion of those nodes." *Id.* at 919:9–11, 16–19. And Mr. Birch testified that the nodes that were not requested or fetched are also never displayed. *See id.* at 920:22–921:15. Mr. Birch testified that the approach he described is "used in all versions of the accused Google Earth products" and "all versions of Google Earth used this approach since it was released in 2005." *Id.* at 921:16–23.

Google's technical expert Dr. Michael Goodchild also testified about the operation of Google Earth as to "all three groupings of the Google Earth products," Trial Tr. at 1109:15–16, based on his examination of the source code, discussions with Google engineers, and Google documents published about Google Earth, *id.* at 1097:8–13. Dr. Goodchild stated that "[w]e first begin traversing the metadata tree. . . . So we are dividing, but we're not requesting and storing and representing anything at this stage. . . . So the next step is to prioritize the list. And to do this on the basis of the desirability of retrieving particular tiles from the server." Trial Tr. at 1110:1–1111:2. According to Dr. Goodchild, Google Earth then requests data from the nodes, beginning with the "fine resolution data that are going to satisfy the user" as well as less fine data if there are sufficient computer tasks to do so. *Id.* at 1111:7–8; *see also id.* at 1111:19–20 ("And so [the fine resolution data] D1 through D8 have been requested, [but also the less fine resolution] B1 has been requested."). Dr. Goodchild stated that "with this process, which began with traversal,

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view," Trial Tr. at 914:23, and not data outside the field of view excluded by step (e). *See also* D.I. 459, Ex. 7 (Dr. Goodchild's Demonstrative Slides) (representing Google Earth traversal of a metadata tree for a given field of view).

we have been smart enough to identify the [nodes] we really want . . . [a]nd not have to retrieve all of the intermediate ones, so we have been able to skip certain nodes or tiles." *Id.* at 1113:9–14. Dr. Goodchild concluded that based on his review of the Google Earth source code, "Google Earth does not request or represent each of the smaller sections and, therefore, it does not infringe claim 1, step F." *Id.* at 1117:2–4.

In short, both Mr. Birch and Dr. Goodchild testified that not all relevant nodes—i.e., "higher resolution space-related data for each of the smaller sections," '550 patent, col. 10, ll. 36–37—are requested or represented by Google Earth, because the highest resolution nodes are prioritized and requested first; when all of the highest resolution nodes have been requested, stored, and represented, then the intermediate nodes are never requested, stored, and represented.[3] Dr. Goodchild also concluded that "because the dividing does not lead to retrieving, storing and representing, and we can proceed to further divisions without [having] executed all of step F," *id.* at 1120:11–14, Google Earth "simply does not repeat step F" as required by step (g) of the '550 patent, *id.* at 1121:13.

ACI argues that it presented testimony that steps (f) and (g) embody the process of "coarse-to-fine zooming," and that Google Earth's source code executes coarse-to-fine zooming in default. D.I. 445 at 4-5. ACI asserts that the testimony by Mr. Birch and Dr. Goodchild "contradict[s] what is stated in Google's source code." *Id.* at 7. The source code is not entirely clear on its face. Both parties offered testimony as to what the source code required. It is the jury's role to decide the credibility and weight of evidence, and the jury was entitled to believe Google's witnesses. "[C]onflicting evidence which could reasonably lead to inconsistent

[3] ACI argues that Mr. Birch and Dr. Goodchild testified that the particular sequence of retrieval can be unpredictable, but that does nothing to show that node-skipping does not occur or suggest that step (f) is practiced.

conclusions will not justify a judgment notwithstanding the verdict or a directed verdict. . . . It is the function of the [jury] . . . to evaluate contradictory evidence and to draw inferences therefrom." *Fireman's Fund Ins. Co. v. Videfreeze Corp.*, 540 F.2d 1171, 1178 (3d Cir. 1976) (citations omitted). The court finds that there was substantial evidence, such as the testimony from Mr. Birch and Dr. Goodchild, as to the node-skipping operation of Google Earth, supporting the jury's non-infringement verdict.

ACI further argues that the testimony established that Google Earth did not utilize a node-skipping mode of operation with respect to each section in a field of view and that therefore Google Earth practices steps (f) and (g) at least some of the time, and infringes at least some of the time. While "[i]t is well settled that an accused device that sometimes, but not always, embodies a claim nonetheless infringes," *Broadcom Corp. v. Emulex Corp.*, 732 F.3d 1325, 1333 (Fed. Cir. 2013) (internal quotation marks, brackets, and citation omitted), here step (f) requires that the method be performed in each instance in order to infringe. Claim 1 of the '550 patent requires practicing step (f) for "*each* of the smaller sections" '550 patent, col. 10, l. 35. Thus performance of the node-skipping operation instead of step (f) for at least some of the sections prevents infringement.[4]

[4] ACI also relies on a video, admitted into evidence but not played in court, of two Google engineers giving a presentation regarding Google Earth at a conference in 2014. *See* Trial Tr. 478:4–5; PTX 142. According to ACI, the video explains that "Google Earth normally operates in one of two modes: 'navigation mode' and 'deep load mode.' . . . 'Navigation mode' . . . [is] the normal request order, [and] is purely coarse to fine. . . ." D.I. 466 at 10 (citation omitted). According to ACI, another engineer indicates that Google Earth uses 'navigation mode' about 90 percent of the time. *Id.*

This video does not support ACI's case. First, this video exhibit is not sworn testimony, or otherwise admissible for the truth of the matter asserted in the video. Second, it is not even clear from the video that all higher resolution data were represented as step (f) requires—rather, "[i]f the children [nodes] are ready to render, [we] clear out the parent [nodes]." PTX 142 at 17:00–17:16. Third, the deposition testimony of one of the Google engineers indicated that there

Accordingly, the court will deny ACI's motion for judgment as a matter of law that the Google Earth Products infringe the asserted claims of the '550 patent.

B. ACI's Motion for JMOL of No-Invalidity

ACI moves for judgment as a matter of law that Google failed to prove anticipation and/or obviousness of claims 1, 3, 14, and 28 of the '550 patent by clear and convincing evidence.

1. Anticipation by the SRI TerraVision System

A prior art system anticipates if it discloses "every limitation of the later claimed invention." *Zenith Elecs. Corp. v. PDI Commc'n Sys., Inc.*, 522 F.3d 1348, 1356 (Fed. Cir. 2008). Pre-America Invents Act "[s]ection 102(b) may bar patentability by anticipation if the device used in public includes every limitation of the later claimed invention . . . ." *Netscape Commc'ns Corp. v. Konrad*, 295 F.3d 1315, 1321 (Fed. Cir. 2002). "[T]he dispositive question regarding anticipation is whether one skilled in the art would reasonably understand or infer from the prior art reference's teaching that every claim element was disclosed in that single reference." *Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358, 1368 (Fed. Cir. 2003) (internal quotation marks, alterations, and citation omitted).

The jury found that the SRI TerraVision system was in public use before the priority date of the '550 patent, December 22, 1995. The jury was instructed that "[a]n invention is publicly

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are "many significant differences" between the presentation and how the Google Earth source code actually works. Trial Tr. at 479 at 16–17. Fourth, the engineers in the video did not purport to analyze Google Earth in terms of infringement of the '550 patent. Finally, even if there had been testimony that Google Earth uses 'navigation mode' 90 percent of the time, the jury would have been entitled to credit Mr. Birch's and Dr. Goodchild's testimony that Google Earth does not practice step (f) of the patent.

used if it is used by the inventor or by a person who is not under any limitation, restriction, understanding, or obligation of secrecy to the inventor. The absence of affirmative steps to conceal the use of the invention is evidence of a public use. However, non-commercial secret use by a third party is not public, unless members of the public or employees of the third party have access to the invention." D.I. 410 at 18. The jury was also instructed that, for there to be public use, it was required to find that the invention was "complete and could be used for its intended purpose" and "accessible to the public" in light of "the nature of the activity that occurred in public; public access to the use; confidentiality obligations imposed upon observers; and the circumstances surrounding testing and experimentation." *Id.*

The jury determined that the SRI TerraVision system anticipates claims 1, 3, 14, and 28 of the '550 patent. In this respect the jury was instructed that it "may find a claim is invalid based on prior public use if there is clear and convincing evidence that each claim step was publicly used." *Id.*

ACI argues that substantial evidence does not support the jury verdict. At trial, Google presented evidence that the SRI TerraVision system was placed in public use at two conferences—the 1994 MAGIC Symposium and SIGGRAPH '95—and that various contemporaneous documents (a video of the SRI TerraVision system created in 1994 and its accompanying script, SRI technical papers published in December 1993 and April 1994, materials submitted to the 1995 MAGIC Technical Symposium in August 1995; and a description of TerraVision published on a CD-ROM distributed to SIGGRAPH '95 attendees) described the system that was in public use.

First, ACI argues that the evidence did not support the jury finding that the SRI TerraVision system embodied all required claim limitations. Dr. Goodchild testified that, based on his review of the TerraVision video and publications, the TerraVision system embodied each of the limitations of the asserted claims. Trial Tr. at 1139:1–1150:1. Step (a) of claim 1 requires "providing a plurality of spatially distributed data sources." '550 patent, col. 15, ll. 20–21. Stephen Lau, a former SRI employee who worked on the SRI TerraVision system, testified that by 1994, there were image server system ("ISS") servers in Berkeley, California; Lawrence, Kansas; Kansas City, Kansas; Sioux Falls, South Dakota; and at the Minnesota Supercomputing Center in Minneapolis, Minnesota; and that the SRI TerraVision system demonstrated at MAGIC 1994 and SIGGRAPH '95 retrieved data from ISS servers "located at various locations on the [MAGIC] network." Trial Tr. at 1035:9–24; 1059:3–12. The script for the 1994 TerraVision video stated that "[t]he network currently connects Minneapolis; Sioux Falls, South Dakota; and Kansas City, Lawrence, and Fort Leavenworth in Kansas." D.I. 459, Ex. 11 at ACI_0009159. Dr. Goodchild reviewed a SRI presentation from August 1995 showing ISS servers in various cities in Kansas, Minnesota, and South Dakota, and testified that there was a "network of distributed, spatially distributed data sources that TerraVision is connected to." Trial Tr. at 1139:5–11; D.I. 459, Ex. 7 at DDX-1003.54. There was substantial evidence that SRI TerraVision embodied step (a), "providing a plurality of spatially distributed data sources."

Steps (b) and (c) require "(b) determining a field of view including the an area of the object to be represented through the a selection of the a distance of the observer to the object and the an angle of view of the observer to the object; [and] (c) requesting data for the field of view from at least one of the plurality of spatially distributed data sources." '550 patent, col. 10, ll. 22–27. The 1994 TerraVision video script described how TerraVision allowed "[t]he user [to] click anywhere

on the map, instantly changing the point of view." D.I. 459, Ex. 11 at ACI_0009160. The April 1994 SRI Technical Note No. 540 stated that a user can choose various viewpoints scenarios, such as "looking down from a low altitude" or "near ground level and looking out toward the horizon." D.I. 446, Ex. F at 2. The paper also states that "TerraVision basically uses an incremental retrieval of the database as required by the user." *Id.* at 3. Dr. Goodchild testified that steps (b) and (c) of claim 1 "are about determining a field of view and then requesting data for the field of view. . . . TerraVision [is] basically using an incremental retrieval of the data base as required by the user. That's [step (c)]. And he or she has seen it from just the right point of view is essentially [step (b)]." Trial Tr. at 1139:24–1140:8. There was substantial evidence that SRI TerraVision embodied steps (b) and (c) of claim 1.

ACI does not dispute whether there was substantial evidence that the SRI TerraVision system embodies step (d) of claim 1. Steps (f) and (g) require

> (f) using a computer, dividing each of the one or more sections having image resolutions below a desired image resolution into a plurality of smaller sections, requesting higher resolution space-related data for each of the smaller sections from at least one of the plurality of spatially distributed data sources, centrally storing the higher resolution space related space-related data, and representing the data for the field of view in a the pictorial representation; and
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> (g) repeating step (f), dividing the sections into smaller sections, until every section has the desired image resolution or no higher image resolution data is available.

'550 patent at col. 10, ll. 31–42. Dr. Goodchild testified that the April 1994 SRI Technical Note No. 540 describes steps (f) and (g), Trial Tr. at 1143:6–12, based on language from the paper stating, "[o]ur approach is to use a coarse-to-fine search on a quad-tree representation of the

terrain"[5] and "Terra Vision basically uses an incremental retrieval of the database as required by the user, rather than forcing the user to copy a part of the database to local storage, visualizing that part, and repeating this until he/she has found the portion of the terrain that was of interest." D.I. 446, Ex. F at 3, 9. ACI argues that Dr. Goodchild's testimony as to steps (f) and (g) are deficient because language from the April 1994 SRI technical paper that states, "repeating this until he/she has found the portion of the terrain that is of interest" comes after the phrase "rather than," and is a description of what TerraVision did not do. *See* D.I. 445 at 22. Dr. Goodchild later explained that the syntax of the phrase "rather than" narrowly excludes only part of the sentence, i.e., "forcing the user to copy a part of the database to local storage," but does not suggest that TerraVision does not perform "visualizing that part" or the "repeating this" phrase. *See* Trial Tr. at 1211:4–14. There was substantial evidence that SRI TerraVision embodied steps (f) and (g) of claim 1.

Claim 2 was not an asserted claim, but claim 3 is a dependent claim that incorporates the limitations of claim 2. Claim 2 requires, "altering the selectable location and performing the steps (b) through (g)," and claim 3 further requires, "determining the data and/or the co-ordinates of the data in terms of a new co-ordinate system." '550 patent, col. 10, ll. 43–48. ACI recognizes that language from the SRI publications "arguably discloses 'altering the selectable location'" but asserts that the language "does not disclose what is required by the rest of the claim, i.e., 'performing steps (b) through (g).'" D.I. 445 at 22.

5 Dr. Goodchild used "coarse-to-fine" as a surrogate term for step (f)'s sequence of dividing, requesting, centrally storing, and representing. *See* Trial Tr. at 1094:16–1095:5 (Dr. Goodchild testifying that "[] Step F describes how [the '550 patent] do[es] this process of course-defined [sic] zoom."). Mr. Birch testified that "get[s] to the final image sooner rather than creating this kind of smooth blurry or coarse to fine transition across the whole image." *Id.* at 923:4–7. The jury was entitled to credit Dr. Goodchild and Mr. Birch's testimony as to the actual operation of Google Earth over Dr. Castleman's contradictory testimony.

The 1994 TerraVision video script states, "when we first move to a new area, the high resolution tiles are not available in local memory, so TerraVision is forced to use lower-resolution tiles. At the same time as the display is being processed, TerraVision is requesting higher-resolution tiles from the server. As they arrive, TerraVision uses these higher-resolution tiles, and the image becomes progressively better focused." D.I. 459, Ex. 11 at ACI_0009163. The April 1994 SRI Technical Note No. 540 also describes for "[a]n important consideration in real-time rendering is maintaining as constant a frame rate as possible, at least while the user is moving," D.I. 446, Ex. F at 17, suggesting that new spatial data is being requested and rendered as the user is moving, i.e., altering the selectable location. Dr. Goodchild also testified that the April 1994 SRI technical paper describes how TerraVision "allow[s] a user to roam around the terrain, which is essentially what Claim 2 is about." Trial Tr. at 1145:15–17. Dr. Goodchild also testified that the additional limitation of claim 3—"determining the data and/or the coordinates of the data in terms of a new co-ordinate system," '550 patent, col. 10, ll. 47–48—is embodied by SRI TerraVision, Trial Tr. at 1146:10–16, pointing to the April 1994 SRI Technical Note No. 541, which stated that the SRI TerraVision system utilizes a "projective transformation (going from the Cartesian local coordinate system to the image's pixel coordinates) . . . specified as the product of two transformations: the first is a projection from the local 3-D coordinate to the image's intrinsic 2-D coordinate system, . . . and the second is from the [2-D] coordinate system to the image's pixel coordinate system." Exhibit to Stephen Lau's Direct Testimony, DTX1037 at 8. Mr. Lau also testified that SRI TerraVision could transform "latitude and longitude coordinates" to local coordinates, Trial Tr. 1047:14–20, as described by the April 1994 SRI Technical Note No. 541. *See* Exhibit to Stephen Lau's Direct Testimony, DTX1037 at 7. There was substantial evidence that SRI TerraVision embodied claim 3.

ACI does not dispute that there was substantial evidence that the SRI TerraVision system embodied claim 14, relating to "dividing . . . sections using a model of the quadrant tree," '550 patent at col. 11, ll. 20–21, or that it embodied claim 28, relating to "representing [] data with a polygonal grid model," *id.* at col. 12, ll. 2–3. Dr. Goodchild testified that SRI Technical Note No. 540 disclosed using a quad-tree. *See* Trial Tr. at 1148:1–4 (citing D.I. 446, Ex. F at 9). Dr. Goodchild also testified that the TerraVision video uses "a set of square tiles [that] have been knitted together to form the display," Trial Tr. at 1149:5–7, and cited Mr. Lau's testimony "about how the TerraVision system also used a triangular mesh, a mesh of three-sided polygons to represent terrain," *id.* at 1149:9–11. There was substantial evidence that SRI TerraVision embodied claims 14 and 28.

Second, ACI argues that Google did not provide corroborating evidence that SRI TerriVision actually embodied the elements of the asserted claims. Generally, "[c]orroboration is required of any witness whose testimony alone is asserted to invalidate a patent." *TypeRight Keyboard Corp. v. Microsoft Corp.*, 374 F.3d 1151, 1159 (Fed. Cir. 2004) (citations omitted). The Federal Circuit has held that "documentary evidence [such as a manual for a prior art machine], created around the time the machine was developed, provides strong support for [] testimony" describing the machine. *Lazare Kaplan Int'l, Inc. v. Photoscribe Techs., Inc.*, 628 F.3d 1359, 1374 (Fed. Cir. 2010) (holding also that a "commercial video illustrating the machine in operation and an undated photograph of the machine" lent credence to witness testimony, *id.* at 1375). Mr. Lau testified that "[t]he features of TerraVision that was demonstrated at SIGGRAPH 1995 were the same that was, . . . in the papers that had been published to date," Trial Tr. at 1050:1–4, namely, the video of the SRI TerraVision system created in 1994 and accompanying script, SRI technical papers published in December 1993 and April 1994, materials submitted to

the 1995 MAGIC Technical Symposium in August 1995; and a description of TerraVision published on a CD-ROM distributed to SIGGRAPH '95 attendees. *See id.* at 1034:24–1035:5; 1040:16–22; 1042:22–1043:4; 1044:3–6; 1057:6–8. These contemporaneous video and documentary evidence corroborate Mr. Lau's and Dr. Goodchild's testimony about what was demonstrated at the 1994 MAGIC Symposium and SIGGRAPH '95.

Third, ACI claims that Google "offered no evidence that any of the system capabilities described in [the SRI publications] would have been ascertainable, *e.g.*, to those who attended the 1994 [MAGIC] Symposium and SIGGRAPH 95." D.I. 445 at 19. ACI argues that the "use must inform the public that what they are seeing is, in fact, the claimed invention," and that observers of the SRI TerraVision video "would have had no idea how the Terravision [sic] application defined a field of view, fetched data for that field view, pictorially represented that data or sharpened that pictorial representation . . . . The claimed method . . . would have been opaque to the observer." D.I. 466 at 14–15.

Controlling authority contradicts ACI's contention that the public must be able to ascertain the individual elements of an invention for it to constitute a public use. In *Egbert v. Lippmann*, the Supreme Court explained that "some inventions are by their very character only capable of being used where they cannot be seen or observed by the public eye. An invention may consist of a lever or spring, hidden in the running gear of a watch, or of a rachet, shaft, or cog-wheel covered from view in the recesses of a machine for spinning or weaving. Nevertheless, if its inventor sells a machine of which his invention forms a part, and allows it to be used without restriction of any kind, the use is a public one." 104 U.S. 333, 336 (1881). In *Egbert*, the Court held that there was a public use when an inventor "presented [corset steels] to [a third-party] for use. [The inventor] imposed no obligation of secrecy, nor any condition or

restriction whatever. . . . [The third party] used them for years for the purpose and in the manner designed by the inventor." *Id.* at 337.[6] And in doing so the Court rejected the position of the dissenting opinion that "the little steel spring inserted in a single pair of corsets, and used by only one person, covered by her outer-clothing, and in a position always withheld from public observation," *id.* at 339 (Miller, J., dissenting) is not a public use.

The critical inquiry is whether the invention is "used without restriction of any kind." *Id.* at 336. *See also Elec. Storage Battery Co. v. Shimadzu*, 307 U.S. 5, 20 (1939) ("The ordinary use of a machine or the practise of a process in a factory in the usual course of producing articles for commercial purposes is a public use" where "[t]here is no finding . . . that efforts were made to conceal [the use] from anyone who had a legitimate interest in understanding them."). Similarly, in *Hall v. Macneale*, the Supreme Court held that "the use and sale of [] solid conical bolts in . . . [two] safes . . . constituted a use and sale of the invention." 107 U.S. 90, 96 (1883). Of the bolts, the Supreme Court noted that the use of the bolts was "necessarily known to the workmen who put them in" and also that "[t]hey were, it is true, hidden from view, after the safes were completed, and it required a destruction of the safe to bring them into view. But this was no concealment of them or use of them in secret. They had no more concealment than was inseparable from any legitimate use of them." *Id.* at 97. *See also New Railhead Mfg., L.L.C. v. Vermeer Mfg. Co.*, 298 F.3d 1290, 1299 (Fed. Cir. 2002) (holding the argument that "the patented method was not in public use because one could not view the [patented] drill bit or see it in operation rings hollow because '[i]t is not public knowledge of his invention that precludes the

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6 In *Egbert* there was evidence that the third-party ripped out the steels and could examine them, and that on at least one occasion the inventor showed another person the steels and explained how they were made and used. *See* 104 U.S. at 335. But the Supreme Court's holding is broader, and covers "inventions . . . only capable of being used where they cannot be seen or observed by the public eye." *Id.* at 336.

inventor from obtaining a patent for it, but a public use or sale of it'") (quoting *City of Elizabeth v. American Nicholson Pavement Co.*, 97 U.S. 126, 136 (1877) (alteration in original)).

The cases ACI cites do not support a contrary view. In *Dey, L.P. v. Sunovion Pharmaceuticals, Inc.*, the Federal Circuit reversed the grant of summary judgment that Sunovion's clinical trial of the drug formoterol to treat chronic obstructive pulmonary disease was a public use. 715 F.3d 1351, 1353 (Fed. Cir. 2013). This was so because "limited disclosure to a small number of uninformed observers[, i.e., the subjects of the clinical trial]" the restrictions on the subjects' usage of the drug, and the confidentiality agreements imposed on the investigators would permit a reasonable jury to find that the use of the drug "was sufficiently controlled and restricted, rather than unfettered and public." *Id.* at 1356. Similarly, in *Delano Farms Co. v. California Table Grape Commission*, the Federal Circuit held that there was no public use because the facts showed the use of grape plants was "confidential and non-public." 778 F.3d 1243, 1249 (Fed. Cir. 2015). The planting of grape varieties outdoors and "visible from public roads" was effectively secret because "unreleased varieties were not labeled in any way, and the appellants introduced no evidence that any person other than the [secret users] had ever recognized the unreleased varieties." *Id.* at 1249.

Here, the SRI TerraVision system was publicly demonstrated at two technical conferences, to attendees with knowledge in the art, without restriction or effort to maintain confidentiality. Mr. Lau testified that at SIGGRAPH '95 he

> did live demonstrations of TerraVision in operation on the exhibit floor retrieving data from [] across the network. . . and also showed the video [of SRI TerraVision] in a loop on a TV screen. . . . [There was] a workstation there that actually could run TerraVision. And once again we had ISS's scattered throughout the [MAGIC] network as you saw. So TerraVision in operation

> would actually pull that information across the [I]nternet from the [Magic] network and display that in real time on the show floor.

Trial Tr. at 1048:17–21. Mr. Lau also testified that "at least 500" people saw the live demonstration, *id.* at 1049:15, and that he even shared the SRI TerraVision source code, which "was compiled to run on the workstation to get the demo[nstration] running," with ART+COM employees, because the project "was a federally funded project that was meant to be put in the public domain," *id.* at 1051:4–13; 1051:23–1052:1.

Mr. Lau further testified that he demonstrated SRI TerraVision at the 1994 MAGIC Symposium to "[a]pproximately about a hundred people." *Id.* at 1059:13–14. He testified,

> I gave a demonstration, a live demonstration[,] of TerraVision to the attendees. And we also showed . . . the [1994] video [of TerraVision] . . . . We had a live demonstration that we worked on a workstation . . . and we had ISS's located at various locations on the [MAGIC] network and we did a live demonstration of TerraVision being able to retrieve the data from across the network in real time as you fly.

Trial Tr. at 1058:20–1059–10. The jury was entitled to find that the activities constituted a public use. Even under ACI's view that members of the public must be informed of the elements of an invention, in fact there was evidence that every detail was disclosed by the provision of the source code to ART+COM. A single public use is sufficient. *Worley v. Loker Tobacco Co.*, 104 U.S. 340, 343 (1881).

Finally, ACI argues that Google did not show that the SRI TerraVision system was "ready for patenting." In *Pfaff v. Wells Electronics, Inc.*, 525 U.S. 55, 67 (1998), the Supreme Court held that the 35 U.S.C. § 102 on-sale bar applies only when the invention is "ready for patenting. That condition may be satisfied in at least two ways: by proof of reduction to practice before the critical date; or by proof that prior to the critical date the inventor had prepared drawings or other descriptions of the invention that were sufficiently specific to enable a person skilled in the art to

practice the invention." *Id.* at 67–68. *See also Medicines Co. v. Hospira, Inc.*, No. 2014-1469, 2016 WL 3670000, at *7 (Fed. Cir. July 11, 2016) (en banc) (describing the *Pfaff* "ready for patenting" requirement). Because the on-sale bar and the public use bar stem from the same policy considerations, the Federal Circuit has held that "the Supreme Court's 'ready for patenting test' applies to the public use bar under § 102(b)." *Invitrogen Corp. v. Biocrest Mfg., L.P.*, 424 F.3d 1374, 1379 (Fed. Cir. 2005). "An invention is reduced to practice when it works for its intended purpose. . . . [i.e.,] when there is a demonstration of its workability or utility." *Atlanta Attachment Co. v. Leggett & Platt, Inc.*, 516 F.3d 1361, 1366–67 (Fed. Cir. 2008) (citations omitted). By agreement, the jury was not instructed based on the Court's "ready for patenting" language *in haec verba*. Instead, the jury was instructed that for SRI TerraVision to have been in public use, it must find that SRI TerraVision was "complete and could be used for its intended purpose." D.I. 410 at 18. There was no challenge to this instruction.

During the trial, Mr. Lau testified that he and his team demonstrated the SRI TerraVision system at the 1994 MAGIC Technical Symposium held at the University of Kansas in August 1994 and the SIGGRAPH '95 conference held in Los Angeles in August 1995. *See* Trial Tr. at 1048:3–6. Mr. Lau also testified that at the SIGGRAPH '95 conference he performed live demonstrations of SRI TerraVision to at least 500 people, and in fact "gave [] the source code to TerraVision" to ACI employees who were in attendance and "walk[ed] them through the source code." *Id.* at 1049:15; 1050:22–1051:3; 1052:1–3. While ACI argues that TerraVision was a "work in progress" and there remained "multiple 'research issues,'" D.I. 445 at 16–17 (citations omitted); an invention can be considered reduced to practice "even though it may later be refined or improved," *New Railhead Mfg.*, 298 F.3d at 1297. There was substantial evidence that the SRI

TerraVision system was "complete and could be used for its intended purpose," i.e., that it was "ready for patenting."

The court will deny ACI's motion for judgment as a matter of law that no reasonable jury could have found that Google offered clear and convincing proof that the SRI TerraVision system anticipated the asserted claims of the '550 patent.[7]

2. Anticipation of Claims 1, 14, and 28 by the T_Vision Paper

I next consider the alternative jury finding of anticipation of claims 1, 14, and 28 by the T_Vision Paper. The jury found that the T_Vision Paper was a printed publication, i.e., "disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter exercising reasonable diligence could locate it," D.I. 410 at 17, before December 22, 1995 and that the T_Vision Paper anticipates claims 1, 14, and 28 of the '550 patent. *See* D.I. 412 at 4.

The T_Vision Paper describes the T_Vision earth visualization research project created by ART+COM e.V.,[8] including team members Gerd Grueneis, Pavel Mayer, Joachim Sauter, and Axel Schmidt—the four co-inventors of the '550 patent. D.I. 446, Ex. E at 3–4. It "provides a [] virtual globe as a multimedia interface to visualize any kind of data related to a geographic region. The virtual globe is model[]ed from high resolution spatial data and textured with high resolution satellite images." *Id.*

7 ACI also urges that it is entitled to judgment as a matter of law that the SRI TerraVision system did not render obvious the asserted claims. *See* D.I. 445 at 23. The jury determined that SRI TerraVision anticipated the asserted claims, and did not reach the question of obviousness on the basis of SRI TerraVision. Because the court upholds the jury's anticipation verdict as to the SRI TerraVision system, it need not reach the issue of obviousness. *See St. Jude Med. Cardiology Div., Inc.*, 2013 WL 4517534, at *7.

8 ACI is a spin-off of ART+COM.

ACI first argues that there was no evidence that the T_Vision Paper was published before the priority date because there was no evidence that, as Google claimed, CD-ROMs containing the paper were distributed at the SIGGRAPH '95 conference, held in August 1995. D.I. 445 at 10. The jury heard testimony from Google witnesses. Mr. Lau, who attended SIGGRAPH '95, testified that "all the attendees [of SIGGRAPH '95] received [] printed proceedings from the conference itself and also a CD-ROM containing electronic versions from the conference itself." Trial Tr. at 1055:13–16. At trial, Mr. Lau recognized the SIGGRAPH 95 CD—produced in this suit by a third-party, the Association for Computing Machinery ("ACM")—as the one provided to the attendees of the conference and recognized "T_Vision down the bottom there" as one of the available files on the CD. Trial Tr. at 1055:24–1057:19.[9]

Bernard Rous, a corporate witness for ACM, which organized the SIGGRAPH conferences, corroborated aspects of Mr. Lau's testimony. He testified that, based on general ACM practices, CD-ROM materials were given to SIGGRAPH '95 attendees.[10] Trial Tr. at 1024:8–1025:1; 1027:13–18. Mr. Rous testified that "[g]enerally speaking, the attendees [of SIGGRAPH conferences] are given—the CD-ROMs that are produced as hard copy of the proceedings" and "normally speaking when people enter, they have their registration badge, . . .

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9 While Mr. Lau testified at his deposition that he could not remember if the SIGGRAPH '95 CD-ROM contained the T_Vision publication, his memory was refreshed at trial by looking at the actual CD-ROM. *See* Trial Tr. at 1057:2–12.

ACI's objections to Mr. Lau's testimony based on allegedly improper payments are addressed in the court's order denying ACI's Rule 60(b) motion. D.I. 471. For the reasons stated in that order, the court rejects ACI's claim that Mr. Lau's testimony was not credible because of improper payments. Mr. Lau appeared to testify candidly and carefully, and there was nothing to indicate that his testimony was influenced by payments.

10 *See Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1569 (Fed. Cir. 1988) ("Evidence of routine business practice can be sufficient to prove that a reference was made accessible before a critical date.").

and as they come in, they pick up what's being distributed to them." *Id.* at 1024:10–13; 1025:7–11.

The testimony of Mr. Lau, confirmed in part by Mr. Rous, constituted substantial evidence that the T_Vision Paper was a printed publication distributed on CD-ROM at SIGGRAPH '95 before December 22, 1995. There was no contrary evidence. ACI presented testimony from Pavel Mayer, an inventor of the '550 patent, who stated that he did not "recall receiving any CD-ROM materials at [SIGGRAPH] '95," Trial Tr. at 351:6–11; and co-inventor Axel Schmidt, who stated that he had not seen the T_Vision paper in any form "including a CD-ROM at [SIGGRAPH] '95" prior to his deposition in this litigation, Trial Tr. at 442:18–443:1. This testimony was not evidence that the CD-ROM was not distributed and, even if it were, the jury was entitled to disbelieve it.

ACI next argues that the jury verdict that the T_Vision Paper anticipated claims 1, 14, and 28 are not supported by substantial evidence. ACI only challenges Google's evidence as insufficient "as to steps (b), (f) and (g) of claim 1." D.I. 445 at 12. Step (b) requires "determining a field of view including an area of the object to be represented through a selection of a distance of the observer to the object and an angle of view of the observer to the object." '550 patent at col. 10, ll. 23–26. The T_Vision Paper discloses "know[ing] all viewing and flight parameters like position and direction. From that it calculates the currently needed data. . . ." D.I. 446, Ex. E at 5. Dr. Goodchild testified that "know[ing] all viewing and flight parameters like position and direction" discloses step (b), which is "about defining the observer's position in terms of an angle of view and a distance." Trial Tr. at 1176:8–15. He further explained that "it would then follow that from the viewing parameters you would calculate the frustum and from that you

would intersect it with the earth and calculate the currently needed data." *Id.* at 1223:4–10.[11] There was substantial evidence that the T_Vision Paper anticipates step (b) of claim 1.

Dr. Goodchild testified that steps (f) and (g) "are concerned with this process of going from co[a]rse [to fine], so F is about dividing, requesting, centrally storing and representing. And then G is about repeating . . . ." Trial Tr. at 1177:22–1178–2. Dr. Goodchild cited the T_Vision Paper's use of an illustration showing the "field of view being divided so that we can obtain better resolution data, in other words we can go from co[a]rse [to fine]," and which he testified was "very similar to Figure 5 [of the] '550 Patent." *Id.* at 1178:4–9; *compare* D.I. 446, Ex. E at 7 with '550 patent, fig. 5. The T_Vision Paper describes the "specific concept of seamless links between different levels of detail [which] allows the continuous zooming from a global view down to recognizable features of only a few centimeters in size." D.I. 446, Ex. E at 3. The T_Vision Paper also states that when using the T_Vision prototype, "[i]f you approach too fast you will get a coarse image, but the frame rate is not affected. . . . The database is organized as a quadtree, contai[n]ing higher levels of detail as you descend down the tree." *Id.* at 5. Dr. Goodchild testified that these excerpts describing "continuous zooming" and a "database [] organized as a quadtree containing high levels of detail to send down the tree" discloses "divid[ing] and then repeat[ing] the process" as in steps (f) and (g). Trial Tr. at 1178:13–21. The T_Vision Paper also teaches "provid[ing] the . . . highest-resolution data required for the current

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11 ACI argues that "Dr. Goodchild did not testify about what the reference actually discloses. Rather, he opined as to what persons of ordinary skill might read into the reference." D.I. 445 at 13. Such testimony is not insufficient because the measure of anticipation is disclosure to a person of ordinary skill. "[E]ven if a piece of prior art does not expressly disclose a limitation, it anticipates if a person of ordinary skill in the art would understand the prior art to disclose the limitation and could combine the prior art description with his own knowledge to make the claimed invention." *Arthrocare Corp. v. Smith & Nephew, Inc.*, 406 F.3d 1365, 1373–74 (Fed. Cir. 2005) (citation omitted).

field of view" and "request[ing] [] data . . . with an appropriate resolution." D.I. 446, Ex. E at 4–5. Dr. Goodchild testified that steps (f) and (g) were disclosed by the T_Vision Paper, Trial Tr. at 1177:18–22, and concluded "that the T_Vision publication does indeed disclose each and every element of Claim 1," *id.* at 1179:3–5.

There was substantial evidence that the T_Vision Paper anticipates steps (f) and (g) of claim 1.

3. Obviousness of Claim 3

In addition to finding claim 3 anticipated by the SRI TerraVision system, the jury found that Google had proven by clear and convincing evidence that claim 3 of the '550 patent would have been obvious to a person of ordinary skill in the art in light of the T_Vision Paper and the Global Mapping Patent. D.I. 412 at 5. Claim 2, from which claim 3 depends, requires "[t]he method of pictorial representation defined in claim 1, further including altering the selectable location and performing the steps (b) through (g)." '550 patent, col. 10, ll. 45–47. Claim 3 further requires "including determining the data and/or the co-ordinates of the data in terms of a new co-ordinate system." *Id.* at col. 10, ll. 49–50.

The T_Vision Paper describes "continuous zooming from a global view down to recognizable features" based on "[t]he user [exercising] full control over which information to view, at what time and at which location." D.I. 446, Ex. E at 3. An user interface called the "'earthtracker' [] facilitates the user's navigation around the virtual globe." *Id.* at 4. Based on the user's "flight parameters like position and direction," the T_Vision system "calculates the currently needed data," "requests the data for a special location with an appropriate resolution." *Id.* at 5. Dr. Goodchild testified that claim 2, from which claim 3 depends, is disclosed by the

T_Vision Paper because "once the view changes, the database will go through the Quadtree to find the appropriate levels of detail." Trial Tr. at 1182:16–23.

The Global Mapping Patent, issued on November 20, 1990, is entitled, "Electronic Global Map Generating System," and is related to a "variable resolution global map generating system for structuring digital mapping data in a new data base structure, managing and controlling the digital mapping data . . . according to new mapping data access strategies, and displaying the mapping data in a new map projection of the earth." '319 patent at col 1, ll. 2–3; 7–12. Dr. Goodchild testified that "claim 3 is about changing the coordinate system, transforming coordinates from one coordinate system to another. . . . And in [the Global Mapping Patent] there is clear reference to the use of coordinate transformations. . . ." Trial Tr. at 1183:20–22.

ACI does not dispute that the Global Mapping Patent discloses the additional limitation of claim 3 of the '550 patent.[12] Indeed, at an earlier stage of the proceedings, ACI's technical expert Dr. Castleman conceded that "[c]o-ordinate systems and transformations thereof were well known at the time of the application." Castleman Cross-Examination Exhibits Binder, Ex. B

[12] The Global Mapping Patent teaches, for example,

> organizing [] mapping data of [] surface area by degrees of latitude and longitude; structuring each [] window of mapping data to represent a substantially rectangular surface area configuration encompassing defined degrees of latitude and longitude for each magnitude, and storing the mapping data for each magnitude in a vertical Mercator projection format; accessing and presenting said windows of mapping data in a corrected or compensated projection format departing from said Mercator projection format according to a real configuration of said surface area, by varying an aspect ratio of latitude to longitudinal dimensions of each window according to a coordinate position of said window with respect to a coordinate layout of said surface area.

'319 patent, col. 31, ll. 9–24.

(Rebuttal Expert Report of Kenneth R. Castleman, Ph.D. Regarding the Validity of U.S. Patent Number RE44,550) at 74. However, ACI argues that Dr. Goodchild did not explain why a person of ordinary skill would have been motivated to combine the Global Mapping Patent with the T_Vision Paper. D.I. 445 at 25–26. The '550 patent specification describes the problem solved by coordinate transformation:

> The range of spatial resolutions covers many orders of magnitude. In order to enable any resolutions while also using evaluating devices which operate internally with a limited numerical precision, for example with computer with an address space limited to 32 bits and/or floating-point of view limited to 32 bits for numbers, after an alteration in the location and of the angle of view of the observer, the data are converted to a new co-ordinate system with a new co-ordinate origin. During a continuous movement of the observer therefore the co-ordinates of the data are constantly subjected to co-ordinate transformation.

'550 patent, col. 5, ll. 10–22. The specification further describes an embodiment of the invention on a Silicon Graphics Onyx computer:

> It operates with floating-point views with a 32 bit representation. As this accuracy in the present example is insufficient for example to follow a movement . . . from space continuously down to a centimeter resolution . . .[,] the co-ordinates of the data during such a movement were continuously converted to a new co-ordinate system with a coordinate origin located in the vicinity of the observer.

Id. at col. 6, ll. 49–56. Thus, claim 3 purports to solve the problem of "enabl[ing] any resolutions while also using evaluating devices which operate internally with a limited numerical precision." *Id.* at col. 5, ll. 12–14. That problem was well-known in the art, as was the solution of using coordinate transformation. For example, Mr. Lau testified that there were "various coordinate transformers within [the SRI] TerraVision" prior art system to correct for "precision [] in doing [] calculations" when moving around from various locations very quickly. Trial Tr. at 1046:22–1047:18.

Dr. Goodchild testified that "in my view the combination of the T_Vision publication and the [G]lobal [M]apping [P]atent would have been obvious to one of ordinary skill in the art." Trial Tr. at 1184:6–9. The Supreme Court held in *KSR International Co. v. Teleflex Inc.* that "[w]hen a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill." 550 U.S. 398, 417 (2007). Here, the concept of transforming coordinates from one system to another had been used to improve the subject of the Global Mapping Patent, a "variable resolution global map generating system" which "allows the quick and easy manipulation of and access to an extraordinary amount of mapping information" on 16 bit and 32 bit computers. '319 patent at col. 1, ll. 7–8; col 2, ll. 49–53; col. 28, l. 68; col. 29, l. 24. The Global Mapping Patent "provides a computer implemented method and system for manipulating and accessing digital mapping data in a tremendous data base, [] for the reproduction and display of electronic display maps which are representative of the geographical . . . features of a selected geographical area[,] . . . [and for] organiz[ing] the mapping data into a hierarchy of successive magnitudes or levels for presentation of the mapping data with variable resolution." *Id.* at col. 6, ll. 9–23. The Global Mapping Patent is thus dedicated to precisely the same field of endeavor as the T_Vision Paper. In creating an electronic map of geographic areas using "an extraordinary amount of" digital mapping data, the Global Mapping Patent recognized that it is useful to use coordinate transformation and describes the advantages of doing so. *See, e.g.*, '319 patent, col. 26, ll. 51–57 ("In its simplest form the coordinate system

is Cartesian, but the invention contemplates a variety of virtual tile manifestations of windowing the mapping data at each magnitude," i.e., at different distances above the Earth or different resolutions). The use of coordinate transformation in combination with the T_Vision Paper was no more than the "mere application of a known technique to a piece of prior art ready for the improvement," *KSR*, 550 U.S. at 417. A person of ordinary skill in the art could obtain from the prior art itself a motivation to combine the T_Vision Paper and the Global Mapping Patent. The court finds there was substantial evidence that claim 3 of the '550 patent would have been obvious in light of the T_Vision Paper and Global Mapping Patent.

II. ACI's Motion for a New Trial

ACI moves in the alternative for a new trial. Rule 59(a) provides: "The court may, on motion, grant a new trial on all or some of the issues—and to any party—as follows: (a) after a jury trial, for any reason for which a new trial has heretofore been granted in an action at law in federal court . . . ." Fed. R. Civ. P. 59(a). The decision to grant or deny a new trial is committed to the sound discretion of the district court. *See Allied Chem. Corp. v. Daiflon, Inc.*, 449 U.S. 33, 36 (1980).

First, ACI argues that the jury deliberations took only 45 minutes, and "[t]hese cursory 'deliberations' yielded a verdict counter to the great weight of the evidence." D.I. 445 at 26. However, "[b]rief jury deliberation is not, in itself, sufficient basis to support a new trial motion. [The] Fourth Circuit once upheld the trial court's denial of a new trial motion where the jury had deliberated only four minutes, and the Fifth Circuit [] has stated that '[i]f the evidence is sufficient to support the verdict, the length of time the jury deliberates is immaterial.'" *Kearns v. Keystone Shipping Co.*, 863 F.2d 177, 182 (1st Cir. 1988) (quoting *Marx v. Hartford Accident &*

Indem. Co., 321 F.2d 70, 71 (5th Cir. 1963), and citing *Segars v. Atl. Coast Line R.R.*, 286 F.2d 767 (4th Cir. 1961)). Here, the jury was extremely attentive throughout the trial, as evidenced by the questions it submitted to be asked of witnesses, and appeared to take the matter very seriously. And for the same reasons articulated above, the court finds that the jury verdict was not counter to the great weight of the evidence.

Second, ACI repeats its allegation that the testimony of Mr. Lau was improperly admitted at trial because he was a paid fact witness. D.I. 445 at 27. The court rejects that basis for ordering a new trial for the same reasons it denied ACI's Rule 60(b) motion. D.I. 471.

ACI's Motions are **DENIED.**

It is **SO ORDERED** this 9 th day of September, 2016.

Honorable Timothy B. Dyk
United States Circuit Judge, sitting by designation